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Re-evaluation Note REV2013-01

Diazinon Risk Management Plan

(publié aussi en français)

18 June 2013

This document is published by the Health Canada Pest Management Regulatory Agency. For further information, please contact:

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ISSN: 1925-0630 (print)
1925-0649 (online)

Catalogue number: H113-5/2013-1E (print version)
H113-5/2013-1E-PDF (PDF version)

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Diazinon Risk Management Plan

1.0 Introduction

The re-evaluation decision on diazinon required the phase-out of most uses of diazinon due to health and environmental risk concerns, with the exception of soil drench and ear tag applications, which were found to be acceptable for continued registration with additional mitigation measures.

Product uses that were not critical, and/or where alternatives exist, were identified for short-term phase-out. These uses were removed from all diazinon product labels as of March 2012.

Critical diazinon uses, with no registered alternative pest control products, were identified for longer-term phase-out, thereby allowing for the development of a transition strategy and alternative risk management tools. In order to manage the longer-term phase-out of critical uses, the re-evaluation decision required a risk management plan to be developed and implemented to further mitigate health and environmental exposures during this period. The plan is presented in this document.

Health Canada's Pest Management Regulatory Agency (PMRA) has consulted with stakeholders to request input for the diazinon risk management plan, as well as other information for consideration in establishing a feasible longer-term phase-out schedule. The information received, in conjunction with additional information assembled by the PMRA, forms the basis of the Diazinon Risk Management Plan and phase-out schedule presented in this document.

2.0 Approach to Diazinon Risk Management Plan

This risk management plan identifies measures that will be mandatory and will be implemented as per the target dates specified in this document. These measures include specific pest management and agronomic practices, and changes to use conditions that may reasonably be expected to further reduce health and environmental exposures. Some risk management measures are applicable to several uses or user groups, while others may be limited to specific products or uses.

The risk management plan also includes a phase-out schedule for the uses of diazinon identified for longer-term phase-out and outlines ongoing PMRA Diazinon Transition Strategy activities. Though the risk management plan identifies additional requirements to further reduce exposures during the phase-out period, the adoption of these measures does not exempt those uses from eventual phase-out as required by the re-evaluation decision.

3.0 Scope of the Risk Management Plan

The plan will apply only to products with uses that have been identified for longer-term phase-out. These products are as follows*:

Table 1 – Products subject to risk management plan.

PCP #	Registrant	Product Name	Formulation
16518	Agrium Advanced Technologies RP Inc.	Pro Diazinon 50 EC	Emulsifiable Concentrate
27538	Interprovincial Cooperative Limited	Diazinon 50 EC Insecticide	Emulsifiable Concentrate
15921	Makhteshim Agan of North America Inc	Diazol 50 EC	Emulsifiable Concentrate
11889	Loveland Products Canada Inc.	Diazinon 500 E	Emulsifiable Concentrate
12538	Loveland Products Canada Inc.	Diazinon 5G Insecticide	Granular
29976	Loveland Products Canada Inc.	Diazinon 50 WSP Insecticide	Wettable Powder

*Registered products as of 11 January 2013. This list does not include products that have already been discontinued.

The objective is to minimize potential risks associated with diazinon uses that will be phased out over a longer term. These uses include the following:

Table 2 – Application methods and crops covered by risk management plan.

Application Method	Crops
Airblast	Christmas trees
Foliar spray (Airblast; Field Sprayer; Mist Blower Sprayer; Handheld Sprayer)	Tobacco seedlings, apple, apricot, blackberry, carrot, cherry, cranberry, currant, gooseberry, loganberry, onion, parsnip, peach, pear, plum, prune, raspberry, rutabaga, strawberry, turnip
Granular	Carrot, onion, parsnip, radish, turnip

4.0 Diazinon Risk Management Plan—Mandatory Risk Reduction Elements

These measures are required to be implemented during the diazinon phase-out period as specified, and product labels will be updated where applicable.

4.1 Phase-out Schedule

Uses of diazinon identified for longer-term phase-out will be grouped according to two timeframes. Uses have been assigned to the specific time frames based on the expected challenges involved in transitioning to alternative pest control measures. Phase-outs will occur as per the following timelines:

Table 3 – Phase out dates for airblast, foliar and granular applications, by crop.

Last Date of Use	Crops
31 December 2013*	apricot, peach, plum and prune
31 December 2016**	Cherry, apple, blackberry, carrot, Christmas tree, cranberry, currant, gooseberry, loganberry, onion (bulb and green), parsnip, pear, radish, raspberry, rutabaga, strawberry, tobacco (greenhouse seedlings) and turnip

* Or at earliest feasible date thereafter.

** If submissions for registration of alternative control products have been received by the PMRA prior to 31 December 2016, a two-year extension to this phase-out date may be granted to allow for the review of such submissions.

4.2 Transition Strategy

Alternative pest management strategies are currently under development by the Diazinon Transition Strategy Working Groups comprised of registrants, growers, crop specialists, extension specialists, researchers and representatives of provincial and other federal departments. The PMRA is coordinating and facilitating these working groups, which are addressing the challenges associated with identifying and implementing diazinon replacements.

Working groups are divided by commodity with individual groups for: root and bulb vegetables; cranberry; and tree fruit. Diazinon transition strategy activities are also coordinated with transition strategies for other pesticides where there are common crop/pest issues. Efforts are underway to coordinate the preparation of registration packages for potential diazinon alternatives. A similar working group of stakeholders has been specifically addressing pesticide issues in Christmas trees and considering the impact of the eventual phase-out of diazinon.

In conjunction with stakeholders, the PMRA is addressing issues related to efficacy research and the registration of potential diazinon alternatives.

4.3 Stewardship Plan

Under this risk management plan, a registrant-sponsored product stewardship plan is required to be implemented as of 31 December 2013. The PMRA has consulted with registrants regarding the development of the stewardship plan and received input.

The objectives of the stewardship plan are to:

- raise awareness of the potential risks of diazinon use and symptoms of overexposure;
- emphasize and promote the importance of adhering to product label requirements and phase-out timelines; and
- adopt additional risk management measures where required.

Diazinon product registrants can meet the stewardship plan objectives through the following required elements of the plan:

i. Website(s)

   a. The establishment of *linked* registrant websites that will *clearly show:*

      i. the longer-term phase-out timelines for all crops;

      ii. the personal protective equipment required for each type of application;

      iii. the restricted-entry intervals, and any other information that is pertinent to the safe application of diazinon.

   b. The stewardship plan web link is to:

      i. be readily accessible to all respective users and distributors;

      ii. provide updates in real time (for example, highlighting stages of phase-out; communicate changes in registered use patterns etc.);

      iii. provide a registrant-distributor-user interface whereby applicators and distributors can obtain information, ask questions and receive real-time answers;

      iv. highlight personal protective equipment required for each use, as well as associated health and environmental hazards;

      v. provide information in English and French.

ii. Information and Other Materials

   a. The registrant websites will be identified to growers/applicators via a highly visible decal on each unit of product.

   b. Registrants will provide distributors with handouts (in the form of booklets or pamphlets) to be given to growers/applicators with each purchase of diazinon. The handouts are to mirror registrants' stewardship plan webpages and provide an overview of the timing of the crop phase-out schedule, as well as relevant risk mitigation measures for each crop use-site phase-out in the schedule. Information tailored to specific grower groups is to be included, if applicable.

   c. Signs for posting of treated area are also to be provided by registrants at each distribution outlet and accompanying each unit of product.

iii. Development of the Stewardship Plan

a. Development and preparation of the stewardship plan is to take place in advance of the targeted implementation date (31 December 2013). The registrants are responsible for:

i. the development of necessary content (i.e. decals, handouts, website) and obtaining PMRA approval of that content;

ii. the implementation of the stewardship plan (i.e. posting and maintaining webpages; maintaining inter-linkages and update mechanisms; producing and printing a sufficient supply information and other materials—decals for packaging, use site posting signs, pamphlets—and delivering respective materials to all distributors).

4.4 Changes to Current Application Practices

This risk management plan identifies several required amendments to current diazinon products, for the purpose of reducing health and environmental exposure.

4.4.1 Chemigation for Cranberries

Chemigation is not currently a registered application method for cranberries. This risk management plan will add chemigation as an application method to relevant diazinon product labels as of 31 December 2013. At that time labels will be updated to specify that application via chemigation is the preferred method of application where the appropriate equipment/infrastructure exist. Labels will still allow for applications by foliar/field sprayer where the appropriate equipment/infrastructure for chemigation application do not exist.

Using chemigation for the application of diazinon to cranberries could potentially reduce occupational exposure since applicators are not required to be in close proximity to the application equipment during application. Equipment may also be flushed by irrigation water at the end of the chemigation cycle, thus reducing potential for exposure from contaminated equipment. Risk reductions would be expected for applicators, though mixer/loader risk is not likely to be affected. Diazinon is only slightly volatile from water surfaces, therefore drift and bystander exposure are not expected to increase due to chemigation.

The following products are subject to label changes pertaining to chemigation.

Table 4 – Products subject to label changes pertaining to chemigation.

PCP #	Registrant	Product Name	Formulation
16518	Agrium Advanced Technologies RP Inc.	Pro Diazinon 50 EC	Emulsifiable Concentrate
27538	Interprovincial Cooperative Limited	Diazinon 50 EC Insecticide	Emulsifiable Concentrate
15921	Makhteshim Agan of North America Inc	Diazol 50 EC	Emulsifiable Concentrate
11889	Loveland Products Canada Inc.	Diazinon 500 E	Emulsifiable Concentrate
29976	Loveland Products Canada Inc.	Diazinon 50 WSP Insecticide	Wettable Powder

*Registered products as of 12 June 2012. This list does not include products that have already been discontinued.

The PMRA will consult with registrants and growers to determine appropriate chemigation use directions.

4.4.2 Automated Fogger for Greenhouse Tobacco Seedlings

Diazinon is applied to tobacco seedlings as a foliar drench using a backpack/hand held sprayer. This application method is considered to be a high exposure activity and poses a risk of concern during mixing, loading, application and postapplication activities.

Effective 31 December 2013, this risk management plan will require labels to be updated to require automated fogging to be used as the application method for widespread ant treatments for greenhouse tobacco seedlings. At the same time labels will be updated to specifically limit foliar drench applications using backpack/hand held sprayer to localized spot treatments. Labels will specify that such treatments cannot exceed 500 m^2 per day. The following product is subject to label changes pertaining to automated fogging for greenhouse tobacco seedlings.*

Table 5 – Products subject to label changes pertaining to automated fogging.

PCP #	Registrant	Product Name	Formulation
29976	Loveland Products Canada Inc.	Diazinon 50 WSP Insecticide	Wettable Powder

*As per diazinon products registered as of 11 January 2013.

4.4.3 Removing Specific Uses of Granular Formulations on Carrot, Onion, Parsnip, Radish and Turnip/Rutabaga

All granular formulations of diazinon are identified for phase-out due to their high risk to small birds and wild mammals that may consume granules in treated areas. Moving from granular to soil drench application for specified crops-pests will reduce the risk to small birds and mammals.

4.4.3.1 Removal of Specific Granular Uses and the Addition of These Uses to Liquid Products

As of 31 December 2014 this risk management plan will require the removal of the following registered uses of granular products.

- Carrot rust fly maggots on carrots and parsnip; and
- Root maggots on radish.

The above uses will be removed from the following granular product*:

Table 6 – Granular products subject to the removal of uses on carrot rust fly (carrots and parsnip), and root maggot (radish).

PCP #	Registrant	Product Name	Formulation
12538	Loveland Products Canada Inc.	Diazinon 5G Insecticide	Granular

*Applicable registered products as of 11 January 2013.

As of 31 December 2014 the PMRA will allow the addition of these specified uses to currently registered liquid formulations that can be applied as a soil drench.

The above uses will be added to one or both of the following products*:

Table 7 – Liquid products subject to the addition of uses on carrot rust fly (carrots and parsnip) and root maggot (radish).

PCP #	Registrant	Product Name	Formulation
11889	Loveland Products Canada Inc.	Diazinon 500 E	Emulsifiable Concentrate
29976	Loveland Products Canada Inc.	Diazinon 50 WSP Insecticide	Wettable Powder

*Registered products as of 21 June 2012. This list does not include products that have already been discontinued.

Appropriate application rates for soil drench applications will be determined in consultation with the registrant and appropriate agricultural specialists. Soil drench uses added for these crops will subsequently expire and be removed from product labels as per their scheduled phase-out dates (see Section 4.1).

4.4.3.2 Removal of Granular Uses with Existing Liquid Product Options

Granular formulations of diazinon are also currently registered for use on:

- Root maggot in onions; and
- Root maggot in turnip/rutabaga.

An alternative diazinon soil drench product is already registered for root maggot in onion (applied in furrow) and turnip/rutabaga (applied to plant and surrounding soil). Therefore, this risk management plan will remove these uses from the granular product label as of 31 December 2014.

The above uses will be removed from the following granular product*:

Table 8 – Granular products subject to the removal of uses on root maggot (onions, tunip/rutabaga).

PCP #	Registrant	Product Name	Formulation
12538	Loveland Products Canada Inc.	Diazinon 5G Insecticide	Granular

*Applicable registered products as of 11 January 2013.

The following alternative products are currently registered as soil drench applications for root maggot in onion and turnip/rutabaga*.

Table 9 – Liquid products currently registered for sol drench applications to root maggot (onions, tunip/rutabaga).

PCP #	Registrant	Product Name	Formulation
16518	Agrium Advanced Technologies RP Inc.	Pro Diazinon 50 EC	Emulsifiable Concentrate
27538	Interprovincial Cooperative Limited	Diazinon 50 EC Insecticide	Emulsifiable Concentrate
15921	Makhteshim Agan of North America Inc	Diazol 50 EC	Emulsifiable Concentrate
11889	Loveland Products Canada Inc.	Diazinon 500 E	Emulsifiable Concentrate
29976	Loveland Products Canada Inc.	Diazinon 50 WSP Insecticide	Wettable Powder

*Applicable registered products as of 11 January 2013.

4.4.4 Removing the Use of Mistblower and Handheld Sprayer as Application Methods for Specific Crops

Mistblower application methods generally result in higher rates of off-target application and drift than other field sprayer application methods. Occupational and environmental exposures can be reduced by limiting such drift and off-target application. Similarly, the use of handheld sprayers generally results in higher occupational exposures than does the use of field sprayers.

Therefore effective 31 December 2013, this risk management plan will require label changes specifically prohibiting the use of mist blower sprayers as an application method, where diazinon application by field sprayers is considered to be efficacious and widely feasible (i.e. uses on cranberry and strawberry).

Label changes to specifically limit the use of handheld sprayers as an application method will also be required for crops where pest issues are generally suited to the use of field sprayer applications. Spot applications using hand-held sprayer will still be permitted but labels will be updated to specifically limit hand-held spot applications to a maximum of 500 m^2 per day.

Uses for which mistblower and handheld sprayer applications will be specifically prohibited are identified as follows:

Table 10 – Prohibitions on application method by crop.

Application Method	Specific Crop for Which Application Method Will Be Prohibited
mist blower sprayer*	cranberry, strawberry
hand-held sprayer (for applications > 500 m^2 per day)**	tree fruit

* Mist blower applications would be replaced by field sprayer.
** Hand-held applications of > 500 m^2 would be replaced by airblast sprayer.

The following product labels are affected by the restrictions on mistblower and hand-held applications, as outlined above.

Table 11 – Products subject to restrictions on mistblower and hand-held applications.

PCP #	Registrant	Product Name	Formulation
16518	Agrium Advanced Technologies RP Inc.	Pro Diazinon 50 EC	Emulsifiable Concentrate
27538	Interprovincial Cooperative Limited	Diazinon 50 EC Insecticide	Emulsifiable Concentrate
15921	Makhteshim Agan of North America Inc	Diazol 50 EC	Emulsifiable Concentrate
11889	Loveland Products Canada Inc.	Diazinon 500 E	Emulsifiable Concentrate
29976	Loveland Products Canada Inc.	Diazinon 50 WSP Insecticide	Wettable Powder

*Applicable registered products as of 11 January 2013.

4.4.5 Additional Buffer Zones

The re-evaluation decision required additional buffer zones for airblast applications of diazinon on Christmas trees, apple and pear trees, and stone fruit. As of 31 December 2013, these buffer zones are required to be updated, and buffer zones will be required for additional crops, as per the table below.

Table 12 – Required buffer zones by application method and crop.

Method of application	Crop		Buffer Zones (metres) Required for the Protection of:			
			Freshwater Habitat of Depths:		Estuarine/Marine Habitats of Depths:	
			Less than 1 m	Greater than 1 m	Less than 1 m	Greater than 1 m
Field sprayer	Carrot, onion, parsnip		80	40	10	4
	Rutabaga, turnip		90	45	10	5
	Currant, gooseberry		85	45	10	4
	Blackberry, loganberry, raspberry, strawberry		120	65	10	5
	Cranberries		120	120	35	20
Airblast	Christmas tree plantation		45	40	15	10
	Apple/pear	Early growth stage	75	65	40	35
		Late growth stage	65	55	30	25
	Stone fruit	Early growth stage	70	60	35	30
		Late growth stage	60	50	30	20
	Blackberry, loganberry, raspberry	Early growth stage	65	55	35	25
		Late growth stage	55	45	25	15
	Currant, gooseberry	Early growth stage	60	50	25	20
		Late growth stage	50	40	20	10

5.0 Implementation of the Diazinon Risk Management Plan

Registrants of affected diazinon products will be informed by the PMRA of specific requirements under this risk management plan pertaining to their product registration(s) and the regulatory options available to them.